

DESCRIPTION OF TABLES AND CHARTS.

Table I gives the data ordinarily needed for climatological studies for about 158 Weather Bureau stations making simultaneous observations at 8 a. m. and 8 p. m., seventy-fifth meridian time daily, and for about 41 others making only one observation. The altitudes of the instruments above ground are also given.

Table II gives a record of precipitation, the intensity of which at some period of the storm's continuance equaled or exceeded the following rates:

Duration (minutes).....	5	10	15	20	25	30	35	40	45	50	60
Rates per hour (inches).....	3.00	1.80	1.40	1.20	1.08	1.00	0.94	0.90	0.87	0.84	0.80

It is impracticable to make this table sufficiently wide to accommodate on one line the record of accumulated falls that continue at an excessive rate for several hours. In this case *the record is broken at the end of each 50 minutes*, the accumulated amounts being recorded on successive lines until the excessive rate ends.

In cases where no storm of sufficient intensity to entitle it to a place in the full table has occurred, the greatest precipitation of any single storm has been given, also the greatest hourly fall during that storm.

Table III gives, for about 30 stations of the Canadian Meteorological Service, the means of pressure and temperature, total precipitation and depth of snowfall, and the respective departures from normal values, except in the case of snowfall.

Chart I.—Hydrographs for several of the principal rivers of the United States.

Chart II.—Tracks of centers of high areas; and

Chart III.—Tracks of centers of low areas. The roman numerals show the chronological order of the centers. The figures within the circles show the days of the month; the letters *a* and *p* indicate, respectively, the observations at 8 a. m. and 8 p. m., 75th meridian time. Within each circle is also given (Chart II) the last three figures of the highest barometric reading and (Chart III) the lowest reading reported at or near the center at that time, and in both cases as reduced to sea level and standard gravity.

Chart IV.—Temperature departures. This chart presents the departures of the monthly mean temperatures from the monthly normals. The normals used in computing the departures were computed for a period of 33 years (1873 to 1905) and are published in Weather Bureau Bulletin "R," Washington, 1908. Stations whose records were too short to justify the preparation of normals in 1908, have been provided with normals as adequate records became available and all have been reduced to the 33-year interval 1873–1905. The shaded portions of the chart indicate areas of positive departures and unshaded portions indicate areas of negative departures. Generalized lines connect places having approximately equal departures of like sign. This chart

of monthly temperature departures in the United States was first published in the MONTHLY WEATHER REVIEW for July, 1909.

Chart V.—Total precipitation. The scale of shades showing the depth is given on the chart. Where the monthly amounts are too small to justify shading, and over sections of the country where stations are too widely separated or the topography is too diversified to warrant reasonable accuracy in shading, the actual depths are given for a limited number of representative stations. Amounts less than 0.005 inch are indicated by the letter T, and no precipitation by 0.

Chart VI.—Percentage of clear sky between sunrise and sunset. The average cloudiness at each Weather Bureau station is determined by numerous personal observations between sunrise and sunset. The difference between the observed cloudiness and 100 is assumed to represent the percentage of clear sky, and the values thus obtained are the basis of this chart. The chart does not relate to the nighttime.

Chart VII.—Isobars and isotherms at sea level and prevailing wind directions. The pressures have been reduced to sea level and standard gravity by the method described by Prof. Frank H. Bigelow on pages 13–16 of the REVIEW for January, 1902. The pressures have also been reduced to the mean of the 24 hours by the application of a suitable correction to the mean of the 8 a. m. and 8 p. m. readings at stations taking two observations daily, and to the 8 a. m. or the 8 p. m. observations, respectively, at stations taking but a single observation. The diurnal corrections so applied will be found in the Annual Report of the Chief of the Weather Bureau, 1900–1901, volume 2, Table 27, pages 140–164.

The isotherms on the sea-level plane have been constructed by means of the data summarized in chapter 8 of volume 2, of the annual report just mentioned. The correction $t_0 - t$, or temperature on the sea-level plane minus the station temperature as given by Table 48 of that report, is added to the observed surface temperature to obtain the adopted sea-level temperature.

The prevailing wind directions are determined from hourly observations at the great majority of the stations; a few stations having no self-recording wind direction apparatus determine the prevailing direction from the daily or twice-daily observations only.

Chart VIII.—Total snowfall. This is based on the reports from regular and cooperative observers and shows the depth in inches and tenths of the snowfall during the month. In general, the depth is shown by lines inclosing areas of equal snowfall, but in special cases figures are also given.

Chart VIII is published only when the general snow cover is sufficiently extensive to justify its preparation.

[Charts XLIII-9—XLIII-23 illustrate the paper by C. F. Brooks on the Snowfall of the eastern United States.]

TABLE I.—Climatological data for United States Weather Bureau stations, January, 1915.

Districts and stations.	Elevation of instruments.		Pressure in inches.		Temperature of the air, in degrees Fahrenheit.						Precipitation, inches.		Wind.					Snow on ground at end of month.												
	Barometer above sea level, feet.	Thermometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean max. + mean min. + 2.	Mean maximum.	Minimum.	Date.	Mean maximum.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Total movement, miles.	Maximum velocity.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.										
		Barometer above ground.				Mean max. + mean min. + 2.	Mean maximum.	Minimum.	Date.	Mean maximum.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Days with 0.01 or more.	Total movement, miles.	Date.	Date.	Date.	Total snowfall.										
New England.						28.9 + 4.6															6.3									
Eastport.	76	67	85	30.02	30.11	+ 0.11	24.6 + 4.5	47	19	32	- 9	30	18	41	22	18	76	5.55 + 2.1	15	9,840	W.	51 ne.	13	7	9	15	6.8	12.2	1.0	
Greenville.	1,070	6	...	28.88	30.10		16.4 + 3.9	49	7	26	- 13	30	6	37	22	18	72	6.00 + 2.2	14	6,164	n.	42 s.	7	14	5	12	5.4	19.0	13.4	
Portland, Me.	103	52	117	30.00	30.13	+ .08	26.4 + 4.4	58	7	33	- 5	30	19	26	23	18	72	6.24 + 2.0	10	2,345	nw.	24	19	7	14	5.9	13.4	10.0		
Concord.	288	70	79	29.81	30.14	+ .07	25.1 + 3.9	57	7	34	- 13	3	16	41	22	18	71	6.47 + 0.1	11	9,039	s.	43 s.	7	3	12	16	6.9	8.9	4.5	
Burlington.	404	11	48	29.65	30.12	+ .07	21.9 + 5.6	51	7	30	- 18	30	14	30	29	28	30	8	4.56 + 0.1	12	4,802	s.	31 s.	7	6	9	18	6.6	15.2	10.0
Northfield.	876	12	60	29.13	30.12	+ .07	18.4 + 3.3	50	7	29	- 28	30	8	43	16	14	71	7,931	nw.	42 n.	13	12	3	16	5.8	7.0	2.3			
Boston.	125	115	90	30.11	30.07	+ .06	33.0 + 6.0	62	4	30	- 27	33	30	26	33	31	34	6.34 + 2.9	17	12,360	n.	78 n.	13	6	7	18	7.4	6.6	2.0	
Nantucket.	12	14	90	30.05	30.09	+ .05	35.6 + 3.5	54	19	41	- 16	30	30	28	33	31	34	6.24 + 4.4	14	14,123	n.	74 n.	12	4	7	15	6.5	4.3	1.2	
Block Island.	26	11	46	30.06	30.09	+ .02	34.6 + 3.2	54	19	40	- 13	30	30	29	33	30	32	8.26 + 4.4	14	14,123	n.	15	3	13	5	15	9.0	3.0		
Narragansett Pier.	9	251	251	29.93	30.11	+ .06	31.8 + 4.6	53	19	39	- 7	31	25	29	31	30	26	8.97 + 2.5	14	6,386	nw.	60	13	13	3	15	5.7	8.8	3.5	
Providence.	160	122	140	29.93	30.11	+ .04	30.6 + 5.1	57	7	37	- 9	5	24	31	28	24	78	5.70 + 1.9	13	5,024	n.	40 sw.	7	6	11	14	6.6	7.4	4.1	
Hartford.	159	117	155	29.95	30.10	+ .02	33.0 + 5.7	57	7	39	- 11	30	27	25	29	24	73	8.59 + 4.7	15	7,029	n.	53 ne.	13	12	4	15	6.0	8.2	3.2	
New Haven.	106	117	155	29.95	30.10	+ .02	33.0 + 5.7	57	7	39	- 11	30	27	25	29	24	73	8.59 + 4.7	15	7,029	n.	53 ne.	13	12	4	15	6.0	8.2	3.2	
Middle Atlantic States.						34.7 + 3.1											78	5.14 + 1.9									7.0			
Albany.	97	102	115	30.02	30.13	+ .06	27.3 + 4.8	56	7	34	- 3	30	20	33	25	22	81	2.76 + 0.2	13	5,839	s.	33 se.	7	8	7	16	6.5	8.2	1.4	
Binghamton.	871	10	69	29.14	30.10	+ .02	27.8 + 4.7	54	19	35	- 3	5	20	35	22	22	72	4.33 + 2.4	15	4,435	nw.	24	19	6	7	18	6.5	13.7	1.9	
New York.	314	414	484	29.75	30.10	+ .00	34.1 + 3.9	57	19	30	- 10	30	28	23	31	26	5.61 + 1.8	17	13,038	nw.	84 s.	7	10	5	12	5.8	4.0	0.9		
Harrisburg.	374	94	104	29.72	30.14	+ .04	32.2 + 3.5	61	19	36	- 11	29	20	27	26	24	75	6.04 + 1.8	15	5,155	c.	32 s.	7	10	9	12	5.8	9.5	2.0	
Philadelphia.	117	123	180	29.99	30.12	+ .01	36.6 + 4.8	61	18	43	- 14	30	30	23	34	30	79	6.74 + 3.3	13	8,586	nw.	60 ne.	12	11	6	14	6.0	2.1	0.5	
Reading.	325	S1	98	29.70	30.13	- .03	33.2 + 4.8	61	18	42	- 19	30	29	23	29	27	80	6.51 + 3.0	14	5,579	nw.	37 ne.	12	7	9	15	6.4	4.0	0.4	
Scranton.	805	111	119	29.23	30.12	+ .03	30.2 + 4.7	61	19	35	- 5	30	30	23	33	30	82	5.28 + 1.9	14	4,790	nw.	32 sw.	19	4	9	18	7.1	8.6	2.3	
Atlantic City.	52	37	98	30.05	30.11	+ .00	35.9 + 3.4	59	7	42	- 15	30	30	23	33	30	82	5.28 + 1.9	16	6,182	nw.	45 ne.	13	9	9	13	6.1	0.3		
Cape May.	18	13	49	30.11	30.13	+ .01	36.4 + 2.3	58	7	42	- 10	40	14	30	20	33	30	86	6.44 + 2.0	13	12,288	nw.	74 ne.	12	9	8	14	6.4	0.5	
Sandy Hook.	22	10	57	30.09	30.11		34.6 + 3.4	59	19	40	- 14	30	30	20	33	30	86	6.44 + 2.0	13	12,288	nw.	74 ne.	12	9	9	13	6.1	2.4	0.4	
Trenton.	190	159	183	29.89	30.10		34.0 + 2.6	58	7	40	- 12	30	27	27	31	28	79	5.15 + 2.0	15	8,503	nw.	70 ne.	12	9	9	13	6.1	2.5	0.5	
Baltimore.	123	100	113	29.99	30.13	+ .01	36.0 + 2.6	58	7	42	- 16	30	30	21	32	28	76	6.81 + 3.6	14	4,982	n.	43 n.	13	9	9	13	5.8	2.0	0.3	
Washington.	112	62	85	29.99	30.12	- .01	35.6 + 2.7	63	18	43	- 18	30	29	27	32	28	76	6.34 + 3.0	14	5,033	nw.	46 nw.	13	10	7	14	5.8	2.2	1.2	
Lynchburg.	681	153	188	29.34	30.11	- .02	38.4 + 2.6	66	18	47	- 20	21	39	33	38	74	3.86 + 6.1	13	5,033	nw.	40 nw.	13	9	8	14	5.8	2.2	1.2		
Norfolk.	91	170	205	30.02	30.12	- .01	42.2 + 1.8	66	6	50	- 25	25	32	28	35	77	5.66 + 2.3	13	10,300	n.	64	13	9	8	14	5.8	2.2	1.2		
Richmond.	143	11	52	29.97	30.13	- .00	39.4 + 1.4	65	18	47	- 23	22	32	28	35	71	5.41 + 2.4	12	5,893	nw.	49 nw.	13	13	5	13	5.3	0.2			
Wytheville.	2,293	40	47	27.65	30.12	- .02	33.2 + 0.2	63	18	41	- 10	22	25	30	30	27	83	3.21 - 1.1	12	4,155	w.	26 w.	19	10	5	16	5.9	4.6	1.0	
South Atlantic States.						45.5 + 1.3											77	5.62 + 1.7									7.8			
Asheville.	3,255	70	84	27.69	30.13	- .03	37.0 + 1.6	60	15	45	- 19	20	39	31	33	29	79	3.41 - 1.3	15	6,707	nw.	35 nw.	13	8	10	13	6.0	0.8		
Charlotte.	773	68	76	29.25	30.11	- .04	41.6 + 1.2	62	18	50	- 23	21	34	26	36	31	73	5.67 + 1.4	8	5,166	ne.	40 sw.	13	7	10	14	6.2	T.		
Hatteras.	11	12	50	30.09	30.10	- .04	48.1 + 2.3	70	18	54	- 31	24	42	44	41	81	6.05 + 1.1	11	13,244	n.	56 w.	13	6	14	5.5					
Manteo.	12	4	46				44.4 + 3.4	58	17	54	- 11	35	24	30	33	38	86	6.88 + 2.2	6											
Raleigh.	376	103	110	29.70	30.12	+ .01	42.2 + 1.8	66	6	50	- 23	22	34	27	36	32	74	5.06 + 1.5	9	6,054	ne.	33 w.	6	12	6	13	5.5	T.		
Wilmington.	73	91	103	30.12	30.12	- .02	47.0 + 2.0	69	23	58	- 27	23	39	29	42	38	76	8.41 + 4.9	9	6,120	w.	30 s.	6	14	7	10	5.1			
Charleston.	48	11	92	30.05	30.10	- .05	49.7 + 0.4	67	31	57	- 23	21	33	24	42	40	74	7.44 + 4.9	12	7,539	ne.	30 sw.	18	12	3	16	5.9			
Columbia, S. C.	351	41	57	29.72	30.12	- .03	45.4 + 0.3	65	6	54	- 27	21	36	28	40	35	73	6.02 + 2.7	10	5,108	ne.	32 sw.	20	9	6	14	5.4			
Augusta.	180	89	97	29.92	30.12	- .03	46.4 + 0.5	70	31	58	- 28	21	37	31	40	38	80	5.21 + 1.1	7	4,165	w.	29 w.	20	9	6	16	6.4			
Savannah.	65	150	194	30.03	30.10	- .05	51.2 + 1.3	70	23	59	- 32	21	44	24	46	42	79	3.58 + 0.4	9	7,903	ne.	42 w.	12	10	5	16	6.3			
Jacksonville.	43	90	129	30.06																										

TABLE I.—Climatological date for United States Weather Bureau stations, January, 1915—Continued

Districts and stations.	Elevation of instruments.		Pressure in inches.		Temperature of the air, in degrees Fahrenheit.						Precipitation, inches.		Wind.																							
	Barometer above sea level, feet.		Thermometer above ground.		Anerometer above ground.		Station, reduced to mean of 24 hours.			Sea level, reduced to mean of 24 hours.			Departure from normal.		Mean maximum.		Mean minimum.		Greatest daily range.		Mean wet thermometer.		Mean temperature of the dew point.		Mean relative humidity, per cent.		Days with 0.01 or more.		Total movement, miles.		Prevailing direction.		Miles per hour.		Maximum velocity.	
<i>Ohio Valley and Tennessee.</i>							32.7	- 0.5																												
Chattanooga.....	702	189	213	29.30	30.13	-	.03	40.6	- 0.0	62	16	48	23	21	33	26	35	30	69	5.73	+ 0.2	13	6,014	nw.	46	18	6	5	20	12.8	0.4					
Knoxville.....	996	93	100	29.02	30.10	-	.05	38.8	+ 1.3	67	31	46	17	24	33	27	35	31	76	4.18	- 0.8	12	3,781	ne.	23	31	6	5	20	12.8	1.0					
Memphis.....	309	76	97	29.68	30.12	-	.04	39.4	- 0.9	65	15	46	17	24	33	27	35	30	69	5.69	+ 0.5	12	6,552	n.	35	31	6	4	21	7.3	2.5					
Nashville.....	546	108	191	29.53	30.13	-	.03	36.2	- 1.8	63	31	44	16	24	28	27	33	30	80	5.89	+ 1.0	15	7,148	nw.	46	31	6	4	21	7.3	7.3	T				
Lexington.....	889	75	102	29.18	30.11	-	.02	32.0	- 1.0	59	18	39	8	24	25	27	28	25	80	4.38	+ 0.6	12	7,597	se.	36	31	5	11	19	7.6	7.0	T				
Louisville.....	525	219	255	29.52	30.12	-	.02	31.9	- 2.4	58	18	39	4	24	24	29	30	28	80	4.98	+ 1.1	13	8,238	se.	39	30	5	11	19	7.6	17.2					
Evansville.....	431	72	82	29.62	30.11	-	.03	31.5	- 0.9	56	18	39	24	24	24	29	24	21	82	3.31	+ 0.5	12	7,236	sw.	35	31	6	4	19	12.8	6.1					
Indianapolis.....	822	154	164	29.18	30.10	-	.03	26.8	- 1.4	53	16	34	-	7	24	19	25	24	21	82	3.14	-	12	7,040	s.	31	31	6	5	11	15	8.9	17.6			
Terra Haute.....	575	96	129	29.45	30.06	-	.03	26.8	-	52	16	34	-	15	24	19	33	24	21	82	3.85	+ 0.5	13	5,209	se.	30	30	6	5	11	15	8.8	13.9	3.5		
Cincinnati.....	628	152	160	29.41	30.11	-	.01	31.4	- 0.9	58	16	39	24	24	24	29	25	21	81	3.30	+ 0.4	15	8,042	sw.	36	32	2	11	15	7.6	17.8	5.0				
Columbus.....	824	173	222	29.19	30.10	-	.01	27.8	- 0.8	51	16	35	-	2	24	21	30	25	22	82	3.38	+ 0.9	17	7,108	sw.	35	32	5	11	12	10	5.8	22.0	7.1		
Dayton.....	809	181	216	29.09	30.08	-	.02	27.6	- 1.3	54	16	35	-	6	24	20	30	24	22	82	4.66	+ 1.8	18	8,156	nw.	48	35	5	11	20	7.7	14.6	3.0			
Pittsburgh.....	842	353	411	29.16	30.10	-	.01	30.6	- 0.1	55	17	38	-	4	29	23	26	28	26	83	5.14	+ 1.8	12	3,213	w.	26	26	3	7	21	13.2	9.8	T			
Elkins.....	1,940	41	50	27.98	30.12	-	.03	31.8	+ 2.8	59	18	41	9	22	23	35	28	25	80	3.68	+ 0.5	15	4,347	se.	28	28	2	7	19	7.4	8.0	1.3				
Parkersburg.....	638	77	84	29.44	30.11	-	.03	31.9	+ 0.6	60	17	40	-	2	24	29	24	28	25	80	3.68	+ 0.5	15	4,347	sw.	28	28	2	7	19	7.4	7.4				
<i>Lower Lake Region.</i>							24.6	+ 0.3																												
Buffalo.....	707	247	280	29.21	30.08	+ .01	25.3	+ 0.6	50	6	31	-	0	30	20	30	23	21	83	5.02	+ 1.7	18	13,138	sw.	80	7	4	4	11	23	8.0	24.9	14.0			
Canton.....	448	10	61	29.59	30.09	-	19.4	+ 3.1	51	-	28	-	31	30	11	37	24	21	85	3.05	- 0.1	12	8,054	sw.	56	19	3	3	25	8.0	13.2	9.0				
Oswego.....	335	76	91	29.71	30.09	+ .02	25.3	+ 1.4	47	7	31	-	4	30	19	26	23	19	75	3.65	+ 0.5	17	9,011	sw.	38	33	7	4	20	7.3	22.9	10.0				
Rochester.....	523	97	113	29.51	30.10	+ .03	25.6	+ 1.6	49	6	32	-	1	30	20	26	23	19	80	1.57	-	15	8,988	e.	36	36	17	5	20	7.3	18.5	4.5				
Syracuse.....	597	97	113	29.49	30.11	+ .04	25.7	+ 2.7	51	7	32	-	1	30	19	29	23	20	78	4.69	+ 2.6	18	8,143	w.	36	36	17	5	16	10	7.0	12.5				
Erie.....	714	92	102	29.28	30.08	+ .01	26.6	+ 0.1	49	17	33	-	4	30	20	24	19	76	2.43	- 0.6	17	8,143	w.	36	36	17	3	25	8.3	33.0	2.7					
Cleveland.....	762	190	201	29.24	30.08	-	26.0	-	50	17	33	-	0	30	20	31	23	20	82	2.52	+ 0.1	17	10,200	se.	48	41	11	10	11	7.4	17.1	1.8				
Sandusky.....	629	62	103	29.38	30.10	+ .01	25.0	-	51	17	32	-	4	24	18	29	23	20	82	2.41	+ 0.3	14	8,856	w.	44	44	12	6	15	8.8	15.3					
Toledo.....	628	208	246	29.38	30.09	-	0.00	24.4	- 1.2	49	17	32	-	4	24	17	24	22	19	83	2.43	+ 0.5	10	10,071	sw.	51	51	11	7	9	9.5	12.6	6.0			
Fort Wayne.....	856	113	124	29.19	30.09	-	23.6	- 3.3	50	17	31	-	8	24	18	29	22	20	84	2.62	-	11	6,599	w.	36	36	7	3	7	21	7.8	20.2	9.8			
Detroit.....	730	218	245	29.26	30.08	-	23.4	- 0.9	40	17	30	-	0	29	17	21	21	19	84	2.69	+ 0.7	13	8,620	w.	50	7	4	10	17	7.3	13.1	4.6				
<i>Upper Lake Region.</i>							18.2	0.0																												
Alpena.....	609	13	92	29.35	30.05	+ .01	20.1	+ 1.4	39	17	26	-	9	28	14	26	18	16	83	1.46	- 0.7	12	9,000	nw.	39	2	2	10	19	7.7	8.1	2.4				
Escanaba.....	612	54	60	29.33	30.03	-	.02	15.2	+ 0.7	36	17	22	-	23	28	8	36	15	12	86	2.98	+ 1.4	18	6,681	nw.	32	31	5	9	17	7.1	25.0	8.0			
Grand Haven.....	632	54	92	29.34	30.06	-	.01	23.5	- 1.0	45	16	29	-	0	28	18	20	22	18	80	1.89	- 0.9	17	8,927	se.	26	26	1	11	19	8.3	6.0	3.0			
Grand Rapids.....	634	62	72	29.23	30.00	-	.05	13.7	- 0.8	40	5	23	-	21	28	6	36	13	12	80	1.57	- 1.2	15	5,149	w.	35	35	17	3	25	8.3	33.0	2.7			
Lansing.....	878	11	62	29.09	30.06	-	20.4	- 1.6	42	17	28	-	13	30	13	31	31	18	86	1.54	- 0.6	15	4,923	sw.	27	27	7	2	22	7.7	6.5	3.0				
Ludington.....	637	60	66	29.31	30.03	-	22.6	-	44	18	28	-	6	28	17	20	21	19	86	1.69	-	15	9,163	se.	39	39	17	4	20	8.9	7.5	2.7				
Marquette.....	734	77	111	29.19	30.03	-	.01	16.3	+ 0.4	39	5	23	-	17	28	9	24	14	11	81	2.41	+ 0.4	13	8,288	w.	47	47	16	6	19	7.5	26.0	14.3			
Port Huron.....	038	70	120	29.35	30.08+	-	.02	20.8	- 1.0	47	17	28	-	10	30	14	27	20	17	83	1.13	- 0.8	13	8,178	w.	38	38	17	4	10	7.2	9.8	8.9			
Saginaw.....	641	48	82	29.35	30.05	-	20.1	-	41	17	27	-	10	30	13	25	19	17	80	1.77	-	13	7,145	sw.	37	37	17	4	20	7.6	6.9	4.5				
Sault Ste. Marie.....	614	11	61	29.32	30.05+	-	.02	14.6	+ 1.3	36	17	28	-	11	33	11	31	31	12	81	1.37	- 0.8	13	6,107	se.	31	31	6	4	21	7.8	12.3	15.8			
Chicago.....	823	140	310	29.15	30.08	-	.02	24.1	+ 0.4	47	16	30	-	8	28	18	23	22	18	86	1.99	0.0	10	9,015	sw.	38	38	7	7	17	7.7	6.7	3.8			
Green Bay.....	617	109	144	29.34	30.04	-	.02	16.0	+ 1.4	39	16	27	-	15	28	9	29	14	10	77	1.29	- 0.4	14	8,239	sw.	44	44	9	9	16	6.5	1.6	2.9			
Milwaukee.....	681	119	133	29.28	30.04	-	.04	19.8	- 0.9	43	16	27	-	15	28	13	30	18	16	84	1.89	- 0.1	8	8,013	w.	39	39	11	11	20	7.9	5.8	2.5			
Duluth.....	1,133	11	47	28.74	30.03	-	.06	9.2	- 1.2	37	5	17	-	28	23	2	33	8	6	90	1.84	+ 0.9	11	10,001	sw.	58	58	17	9	8	14	5.9	17.4			
<i>North Dakota.</i>							6.3	+ 2.2																												
Moorhead.....	940	8	57	29.01	30.10	-	.04	4.9	+ 2.2	34	4</																									

TABLE I.—Climatological data for United States Weather Bureau stations, January, 1915—Continued.

Districts and stations.	Elevation of instruments.		Pressure in inches.		Temperature of the air, in degrees Fahrenheit.								Precipitation, inches.		Wind.				Average cloudiness, tenths.	Snow on ground at end of month.										
	Barometer above sea level, feet.	Thermometer above ground.	Station, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Mean max. + mean min. + 2.	Maximum.	Departure from normal.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity, per cent.	Total.	Departure from normal.	Days with 0.01 or more.	Total movement, miles.	Precipitation direction.	Miles per hour.	Direction.	Date.							
	Anerometer above ground.				19.7	+ 0.7							75	0.72	- 0.6															
<i>Northern Slope.</i>																								5.8						
Hayre.....	2,505	11	44	27.28	30.05	- .05	11.4	- 2.1	41	11	21	- 29	27	2	41	11	9	89	0.67	- 0.0	8	5,003	w.	32	sw.	11	10	5.9	7.6	3.3
Helena.....	4,110	87	114	25.72	30.06	- .09	23.6	+ 3.6	46	19	28	- 32	10	18	24	15	71	0.37	- 0.6	4	5,582	w.	38	sw.	19	12	5.9	5.9	2.9	
Kalspell.....	2,962	11	34	26.91	30.10	- .02	20.2	+ 0.6	40	12	28	- 6	25	12	22	19	16	83	1.19	- 0.4	9	2,139	w.	20	sw.	12	12	7.6	11.9	9.3
Miles City.....	2,371	26	48	27.44	30.11	- .01	17.6	+ 3.1	47	4	28	- 30	27	8	31	14	11	79	1.03	+ 0.4	8	3,241	w.	22	sw.	13	13	4.8	9.1	6.3
Rapid City.....	3,259	50	55	26.52	30.09	- .01	20.6	+ 0.9	57	12	31	- 20	22	10	42	18	12	72	1.15	+ 0.7	11	6,305	w.	38	nw.	19	10	5.7	10.6	5.1
Cheyenne.....	6,088	84	101	23.85	30.00	- .05	25.8	+ 0.2	55	3	36	- 9	22	13	38	20	13	64	0.08	- 0.3	5	12,371	w.	66	w.	12	8	13	5.7	1.0
Lander.....	5,372	60	68	24.53	30.09	- .03	19.3	+ 1.9	55	20	34	- 18	22	5	42	14	7	63	0.44	- 0.0	2	3,140	sw.	44	w.	12	10	11	5.3	5.2
Sheridan.....	3,790	47	62	26.02	30.07	- .07	17.8	+ 1.0	51	12	32	- 22	27	4	45	16	11	75	0.26	- 0.8	12	3,906	nw.	28	sw.	12	12	13	5.0	12.0
Yellowstone Park.....	6,200	11	48	23.77	30.10	- .04	18.6	+ 1.0	43	29	28	- 8	25	10	33	16	12	74	0.47	- 1.8	12	5,337	s.	28	sw.	12	9	5	17	6.3
North Platte.....	3,821	11	51	27.04	30.10	- .02	20.1	- 1.3	49	14	32	- 22	23	9	46	16	13	82	0.51	- 0.0	6	5,336	w.	39	nw.	19	12	10	9	4.7
<i>Middle Slope.</i>																								4.8						
Denver.....	5,291	129	172	24.60	29.99	- .06	29.3	+ 0.2	57	12	42	- 2	22	17	38	24	17	63	0.38	- 0.0	6	6,342	sw.	40	n.	5	15	9	7	4.3
Pueblo.....	4,685	80	86	25.18	29.99	- .06	29.6	+ 0.5	63	24	45	- 2	23	14	48	23	13	54	0.18	- 0.2	3	4,108	nw.	5	20	7	4	3.1	2.9	1.0
Concordia.....	1,398	42	50	25.53	30.06	- .08	29.5	+ 2.1	51	14	35	- 9	28	18	38	24	21	84	0.76	- 0.0	11	5,431	s.	32	nw.	19	10	5	16	5.9
Dodge.....	2,509	11	51	27.35	30.04	- .07	30.6	+ 3.3	61	30	42	- 1	22	19	36	25	19	79	0.98	+ 0.6	8	8,218	nw.	37	nw.	16	15	11	5	4.0
Wichita.....	1,358	139	158	28.54	30.02	- .11	32.2	+ 2.3	58	30	41	- 8	28	20	39	29	28	76	0.78	- 0.6	7	10,622	s.	46	sw.	30	11	9	5	2.2
Oklahoma.....	1,214	10	47	28.73	30.05	- .06	37.1	+ 2.4	65	30	47	- 11	23	28	31	33	28	76	0.78	- 0.6	7	10,622	s.	46	sw.	30	11	11	9	0.3
<i>Southern Slope.</i>																								4.3						
Abilene.....	1,738	10	52	28.20	30.05	- .04	44.0	+ 1.4	74	30	55	- 18	23	22	32	39	29	65	0.67	- 0.2	7	7,939	s.	33	sw.	5	11	10	4.8	0.8
Amarillo.....	3,678	10	49	28.20	30.02	- .04	34.0	+ 0.1	61	14	46	- 9	22	22	30	29	25	77	0.72	+ 0.1	6	9,049	sw.	40	n.	31	23	7	3.3	5.9
Del Rio.....	944	64	71	29.06	30.07	+ .01	47.3	- 2.9	71	25	18	- 32	23	38	34	22	22	79	0.32	+ 1.5	7	6,637	s.	42	nw.	31	13	9	4.9	4.0
Roswell.....	3,506	75	85	28.33	30.03	- .01	36.2	- 3.0	62	21	50	- 7	23	22	43	29	19	55	0.38	- 0.2	3	5,846	nw.	44	w.	15	15	11	5	4.2
<i>Southern Plateau.</i>																								4.0						
E1 Paso.....	3,762	110	133	26.17	30.01	- .00	41.2	- 2.9	72	29	52	- 13	24	30	33	34	24	56	1.01	+ 0.5	5	7,979	nw.	56	sw.	15	13	12	6	4.2
Santa Fe.....	7,013	57	62	23.13	30.08	+ .04	24.4	- 4.1	49	1	34	- 3	23	15	33	20	15	72	1.95	+ 1.4	8	5,147	n.	27	13	13	5	4	15.3	1.0
Flagstaff.....	6,908	8	57	21.3	30.00	- .07	30.6	- 5.4	44	3	35	- 8	16	8	40	34	32	56	0.49	- 0.6	11	5,160	ne.	37	nw.	14	6	7	18	6.7
Phoenix.....	1,108	76	81	28.82	30.00	- .03	50.0	- 0.0	73	3	61	- 27	18	39	38	42	33	56	1.79	+ 0.6	4	3,646	w.	23	w.	15	16	4	11	4.4
Yuma.....	141	9	58	29.86	30.01	- .04	53.8	- 0.9	74	3	65	- 34	24	43	34	34	33	53	2.56	+ 2.1	3	4,457	n.	23	se.	12	9	11	11	5.4
Independence.....	3,910	11	42	25.96	30.01	- .06	35.2	- 5.3	56	19	46	- 18	11	24	32	32	28	82	0.98	+ 0.1	5	4,607	nw.	42	sw.	14	13	11	7	4.3
<i>Middle Plateau.</i>																								5.6						
Reno.....	4,532	74	81	25.43	30.06	- .07	34.4	+ 1.9	56	1	45	- 9	23	24	33	29	23	68	0.55	- 1.4	8	3,809	w.	39	sw.	14	10	9	12	5.5
Tonopah.....	6,090	12	20	24.02	30.08	- .03	30.1	- 0.1	56	20	38	- 9	16	24	20	28	19	64	0.30	- 0.4	5	7,481	se.	40	nw.	14	12	6	4.7	4.0
Winnemucca.....	4,344	18	56	25.60	30.09	- .07	29.3	+ 0.5	48	29	40	- 1	23	18	35	25	21	75	0.49	- 0.6	11	5,160	ne.	37	nw.	14	6	7	18	6.7
Modena.....	5,479	10	43	24.58	30.08	- .02	24.2	- 3.3	48	21	37	- 6	23	11	42	21	16	71	1.12	+ 0.4	7	6,143	w.	36	w.	25	10	8	13	5.6
Salt Lake City.....	4,360	147	189	25.62	30.10	- .05	28.2	- 0.6	44	27	36	- 7	23	21	26	25	18	66	0.72	- 0.6	8	3,892	se.	44	w.	12	9	11	11	5.2
Durango.....	6,546	10	23	25.77	30.12	+ 0.7	21.2	- 3.3	46	1	35	- 9	18	8	40	11	12	80	1.80	+ 0.5	7	n.	21	7	8	12	5.4			
Grand Junction.....	4,602	82	96	25.40	30.10	+ .04	20.2	- 4.5	41	3	31	- 4	24	9	31	18	14	81	0.77	+ 0.3	7	3,259	w.	21	se.	6	11	8	12	5.5
<i>Northern Plateau.</i>																								7.4						
Baker.....	3,471	48	53	28.46	30.18	- .00	23.2	- 0.7	42	31	32	- 6	22	14	29	20	16	75	0.73	- 0.6	10	4,831	se.	24	sw.	14	9	13	5.7	7.4
Boise.....	2,739	78	86	27.22	30.18	- .01	27.6	- 1.7	49	31	35	- 6	24	20	21	25	21	76	1.06	- 0.8	10	2,981	nw.	13	sw.	19	2	12	7.5	0.6
Lewiston.....	757	40	48	29.27	30.10	- .06	32.6	- 1.9																						

TABLE II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during January, 1915, at all stations furnished with self-registering gages.

* Self-register not marking.

1 February.

2 Jan. 6.

TABLE II.—Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during January, 1915, at all stations furnished with self-registering gages—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Memphis, Tenn.	31			1.70																.43	
Meridian, Miss.	31	11.10 a.m.	D. N. p. m.	2.49	5.16 p. m.	5.48 p. m.	.88	.08	.41	.65	.78	.86	.92							.39	
Miami, Fla.	4			0.54																(*)	
Milwaukee, Wis.	30-31			0.65																(*)	
Minneapolis, Minn.	15-16			0.69																(*)	
Mobile, Ala.	16-17	3.45 p. m.	9.00 a. m.	1.04	5.57 a. m.	6.34 a. m.	.08	.12	.26	.45	.61	.70	.75	.81	.85					(*)	
	23	7.45 a. m.	D. N. p. m.	2.50	10.14 p. m.	10.48 p. m.	.83	.14	.28	.45	.55	.59	.67							(*)	
Modena, Utah.	28-29			1.90	10.31 a. m.	11.13 a. m.	.26	.14	.28	.39	.43	.48	.52	.60	.66	.71				(*)	
Montgomery, Ala.	6	7.15 a. m.	11.25 a. m.	1.99	8.48 a. m.	9.13 a. m.	.73	.15	.21	.33	.45	.55								(*)	
Moorhead, Minn.	5-6			0.15																(*)	
Mount Tamalpais, Cal.	8			1.12																.59	
Nantucket, Mass.	25			0.68																.37	
Nashville, Tenn.	31			2.02																.43	
New Haven, Conn.	12			1.70																.24	
New Orleans, La.	{ 16-17	5.00 p. m.	D. N. a. m.	1.84	6.51 p. m.	7.11 p. m.	.11	.25	.36	.42	.53										
	23	D. N. a. m.	6.35 p. m.	3.05	7.18 a. m.	7.38 a. m.	.06	.25	.41	.61	.70									.27	
New York, N. Y.	13			0.92																.27	
Norfolk, Va.	24			1.72																.26	
Northfield, Vt.	18-19			0.58																(*)	
North Head, Wash.	8			0.65																.21	
North Platte, Nebr.	21			0.25																(*)	
Oklahoma, Okla.	30			0.30																.15	
Omaha, Nebr.	16			0.55																(*)	
Oswego, N. Y.	6-7			0.92																(*)	
Palestine, Tex.	31	1.30 a. m.	7.40 a. m.	1.02	1.43 a. m.	2.09 a. m.	.01	.13	.30	.55	.71	.78	.82							.13	
Parkersburg, W. Va.	6			0.55																.16	
Pensacola, Fla.	31-1 ¹	10.10 p. m.	4.35 a. m.	1.48	10.59 p. m.	11.23 p. m.	.01	.23	.42	.57	.66	.71								.16	
Peoria, Ill.	18			0.35																.53	
Philadelphia, Pa.	12			2.19																.47	
Phoenix, Ariz.	29			1.45																.19	
Pierre, S. Dak.	30-31			0.62																(*)	
Pittsburgh, Pa.	18			0.71																.19	
Pocatello, Idaho.	29-30			0.43																(*)	
Point Reyes Light, Cal.	8			0.76																.33	
Port Huron, Mich.	31			0.30																(*)	
Portland, Me.	25			1.83																.27	
Portland, Oreg.	17-18			1.87																(*)	
Providence, R. I.	6	8.18 p. m.	10.54 p. m.	1.07	8.50 p. m.	9.04 p. m.	.13	.24	.50	.65										.33	
Pueblo, Colo.	15			0.12																(*)	
Raleigh, N. C.	6	8.18 p. m.	10.54 p. m.	1.07	8.50 p. m.	9.04 p. m.	.13	.24	.50	.65									(*)		
Rapid City, S. Dak.	20-21			0.44																(*)	
Reading, Pa.	13			1.21																.43	
Red Bluff, Cal.	8			1.26																.40	
Reno, Nev.	26-27			0.24																(*)	
Richmond, Va.	6			0.61																.33	
Rochester, N. Y.	25			1.05																(*)	
Roseburg, Oreg.	13			0.82																.23	
Roswell, N. Mex.	30			0.20																(*)	
Sacramento, Cal.	3			0.44																.33	
Saginaw, Mich.	31			0.71																(*)	
St. Joseph, Mo.	31			0.39																(*)	
St. Louis, Mo.	29-30			1.39																(*)	
St. Paul, Minn.	15-16			0.44																(*)	
Salt Lake City, Utah.	4			0.32																(*)	
San Antonio, Tex.	31			0.10																.09	
San Diego, Cal.	21			1.67																.46	
Sand Key, Fla.	{ 4-5	4.20 p. m.	9.05 a. m.	4.30	10.15 p. m.	11.06 p. m.	.78	.06	.13	.21	.27	.35	.39	.47	.62	.82	.86	.94			
	25	11.21 a. m.	1.19 p. m.	0.73	11.53 a. m.	12.31 p. m.	.01	.13	.23	.34	.43	.58	.63							(*)	
Sandusky, Ohio.	31			0.74																.54	
San Francisco, Cal.	8			0.95																.40	
San Jose, Cal.	3			0.52																.33	
San Luis Obispo, Cal.	29			1.91																(*)	
Santa Fe, N. Mex.	15-16			0.93																(*)	
Sault Ste. Marie, Mich.	6-7			0.57																.36	
Savannah, Ga.	18			1.43																(*)	
Scranton, Pa.	22-23			1.32																(*)	
Seattle, Wash.	3			1.79																.17	
Sheridan, Wyo.	20-21			1.11																(*)	
Shreveport, La.	31	3.40 a. m.	10.40 a. m.	1.54	3.43 a. m.	4.01 a. m.	.01	.22	.35	.40	.45									(*)	
Sioux City, Iowa	31			0.52																(*)	
Spokane, Wash.	13			0.38																(*)	
Springfield, Ill.	30			0.80																.27	
Springfield, Mo.	31			0.60																(*)	
Syracuse, N. Y.	12			1.70																.13	
Tacoma, Wash.	13			0.48																.49	
Tampa, Fla.	11			1.57																.49	
Tatoosh Island, Wash.	11			0.95																.47	
Taylor, Tex.	30-31	D. N. p. m.	D. N. a. m.	0.77	11.59 p. m.	12.25 a. m.	.01	.19	.35	.46	.52	.60	.61							(*)	
Terre Haute, Ind.	22			0.83																.83	1.23
Thomasville, Ga.	17-18	4.45 p. m.	3.10 p. m.	4.11	5.26 a. m.	5.44 a. m.	1.18	.11	.22	.44	.55	.57	.63							(*)	
Toledo, Ohio.	31			0.77	7.37 a. m.	8.31 a. m.	1.91	.08	.10	.23	.30	.34	.37	.48	.54	.57	.63	.83	1.23		
Tonopah, Nev.	29			0.14																(*)	
Topeka, Kans.	16			0.56																(*)	
Valentine, Nebr.	20-21			0.18																(*)	
Vicksburg, Miss.	31	7.44 a. m.	5.05 p. m.	1.44	12.07 p. m.	12.32 p. m.	.44	.11	.35	.48	.63	.74								(*)	
Walla Walla, Wash.	13-14			0.30																(*)	
Washington, D. C.	6-7			1.02	</																

MONTHLY WEATHER REVIEW.

JANUARY, 1915

TABLE III.—Data furnished by the Canadian Meteorological Service, January, 1915.

Stations.	Pressure.			Temperature.						Precipitation.		
	Station reduced to mean of 24 hours.	Sea level reduced to mean of 24 hours.	Depart- ture from normal.	Mean max. + mean min. + 2.	Depart- ture from normal.	Mean maximum.	Mean mini- mum.	Highest.	Lowest.	Total.	Depart- ture from normal.	Total snowfall.
St. Johns, N. F.....	Inches.	Inches.	Inches.	°F.	°F.	°F.	°F.	°F.	°F.	Inches.	Inches.	Inches.
Sydney, C. B. I.....	29.77	29.91	+ 0.05	25.9	+ 2.1	31.4	20.4	50	2	3.12	-2.79	7.0
Halifax, N. S.....	30.03	30.07	+ .14	26.1	+ 5.6	32.2	20.0	52	- 6	1.90	-3.20	7.0
Yarmouth, N. S.....	30.00	30.11	+ .14	24.8	+ 3.0	34.6	14.9	51	- 9	8.38	+2.61	21.9
Charlottetown, P. E. I.....	30.03	30.10	+ .10	28.9	+ 2.6	35.2	22.6	50	6	5.70	+0.29	10.2
Chatham, N. B.....	30.04	30.08	+ .12	22.4	+ 5.4	29.5	15.3	46	-13	5.05	+1.09	32.4
Father Point, Que.....	30.09	30.12	+ .15	17.0	+ 7.2	26.7	7.3	52	-24	2.99	-0.60	12.1
Quebec, Que.....	30.04	30.07	+ .09	15.1	+ 7.1	21.9	8.3	48	-20	1.58	-1.27	12.2
Montreal, Que.....	29.75	30.09	+ .07	14.6	+ 5.5	21.8	7.4	44	-22	3.03	-0.88	20.0
Stonecliffe, Ont.....	29.87	30.10	+ .06	17.5	+ 5.8	24.2	10.8	45	-13	3.65	-0.08	15.6
Ottawa, Ont.....	29.46	30.10	+ .08	11.7	+ 5.3	21.9	1.5	40	-35	1.76	-1.56	13.0
Kingston, Ont.....	29.83	30.18	+ .15	15.3	+ 5.7	23.3	7.3	42	-24	3.18	+0.19	14.5
Toronto, Ont.....	29.78	30.12	+ .07	32.0	+ 4.9	29.5	14.4	44	-24	1.91	-1.54	8.0
White River, Ont.....	29.65	30.05	0.00	23.6	+ 2.2	30.7	16.5	47	-1	3.53	+0.61	27.2
Port Stanley, Ont.....	28.57	29.95	- .06	3.6	+ 4.0	17.6	-10.5	36	-56	1.40	-0.29	14.0
Southampton, Ont.....	29.40	30.07	0.00	20.0	- 2.2	28.3	11.6	40	-25	3.07	+0.08	20.5
Parry Sound, Ont.....	29.32	30.05	+ .04	20.8	+ 0.4	27.5	14.2	40	0	3.30	-0.75	29.0
Port Arthur, Ont.....	29.32	30.05	+ .04	17.0	+ 3.2	25.6	8.5	40	-22	1.86	-2.22	12.0
Winnipeg, Man.....	29.18	30.08	- .03	0.4	+ 7.3	7.9	- 7.0	39	-34	0.69	-0.13	6.9
Minnedosa, Man.....	28.10	30.04	- .06	0.9	+ 8.1	10.1	- 8.3	30	-37	0.38	-0.50	3.8
Qu'Appelle, Sask.....	27.60	29.97	- .11	5.0	+ 8.8	13.3	- 3.3	32	-41	0.30	-0.50	3.0
Medicine Hat, Alberta.....	27.60	29.98	- .09	15.0	+ 9.5	24.2	5.8	42	-27	0.50	0.00	5.0
Swift Current, Sask.....	27.28	29.99	- .10	9.3	+ 6.2	18.7	- 0.1	44	-35	0.48	-0.16	4.8
Calgary, Alberta.....	26.27	29.92	- .11	19.8	+11.4	30.7	8.9	47	-24	0.40	-0.13	4.0
Banff, Alberta.....	25.23	30.02	+ .02	16.0	+ 3.9	25.5	6.5	37	-20	1.05	-0.14	10.5
Edmonton, Alberta.....	27.64	29.94	- .09	10.8	+ 9.0	20.5	1.0	42	-24	1.04	+0.36	7.1
Prince Albert, Sask.....	28.31	29.96	- .13	- 0.6	- 7.8	5.0	- 6.3	30	-42	0.11	-0.86	1.1
Battleford, Sask.....	28.16	30.00	- .08	4.8	+10.7	13.8	- 4.2	35	-38	0.00	-0.40	0.0
Kamloops, B. C.....	28.80	30.07	+ .11	23.3	+ 0.3	29.0	17.5	40	2	0.93	+0.11	9.3
Victoria, B. C.....	29.69	29.95	- .02	40.5	+ 2.0	44.3	26.7	49	31	1.55	-3.84	0.0
Barkerville, B. C.....	25.47	29.86	- .03	19.6	+ 1.8	26.5	12.8	36	- 2	0.77	-1.83	7.7
Hamilton, Bermuda.....	30.02	30.19	+ .06	63.4	+ 1.4	68.0	57.9	74	53	2.80	-2.14	0.0

